

1. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No less than 2 units from the number 9.

- A. $(7, 11)$
 - B. $[7, 11]$
 - C. $(-\infty, 7) \cup (11, \infty)$
 - D. $(-\infty, 7] \cup [11, \infty)$
 - E. None of the above
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4x + 5 \leq 5x - 8$$

- A. $[a, \infty)$, where $a \in [12, 14]$
 - B. $[a, \infty)$, where $a \in [-16, -12]$
 - C. $(-\infty, a]$, where $a \in [-15, -12]$
 - D. $(-\infty, a]$, where $a \in [6, 15]$
 - E. None of the above.
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 - 6x < \frac{-46x + 8}{8} \leq -7 - 8x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-25.5, -17.25]$ and $b \in [-5.25, -1.5]$
- B. $[a, b)$, where $a \in [-21, -15.75]$ and $b \in [-4.5, 0.75]$
- C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-21, -18]$ and $b \in [-6, -3]$
- D. $(a, b]$, where $a \in [-21.75, -16.5]$ and $b \in [-6.75, -0.75]$

E. None of the above.

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 8x \leq \frac{26x - 9}{3} < 4 + 4x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-9.75, -1.5]$ and $b \in [-0.75, 5.25]$
B. $(a, b]$, where $a \in [-5.25, -0.75]$ and $b \in [-0.75, 9.75]$
C. $[a, b)$, where $a \in [-5.25, -2.25]$ and $b \in [0.22, 1.72]$
D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-7.5, -3]$ and $b \in [1.05, 1.8]$
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{9}{8} + \frac{4}{7}x \leq \frac{7}{3}x - \frac{3}{4}$$

- A. $[a, \infty)$, where $a \in [0, 2.25]$
B. $[a, \infty)$, where $a \in [-4.5, 0]$
C. $(-\infty, a]$, where $a \in [-4.5, 0.75]$
D. $(-\infty, a]$, where $a \in [0.75, 2.25]$
E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 3x > 5x \text{ or } 7 + 5x < 8x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.65, -2.4]$ and $b \in [1.95, 2.48]$
B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.96, -3.48]$ and $b \in [1.74, 3.01]$

- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.75, -2.24]$ and $b \in [3.05, 4.35]$
D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3, -1.12]$ and $b \in [3.15, 5.77]$
E. $(-\infty, \infty)$
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-8}{7} - \frac{5}{8}x \leq \frac{5}{6}x + \frac{8}{9}$$

- A. $(-\infty, a]$, where $a \in [0, 4.5]$
B. $[a, \infty)$, where $a \in [0.75, 2.25]$
C. $[a, \infty)$, where $a \in [-2.25, 0.75]$
D. $(-\infty, a]$, where $a \in [-2.25, 0.75]$
E. None of the above.
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 3x > 4x \text{ or } 6 + 9x < 10x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-8.25, -4.5]$ and $b \in [-0.75, 3.75]$
B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 0]$ and $b \in [1.5, 8.25]$
C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9.75, -3]$ and $b \in [0, 4.5]$
D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.25, 2.25]$ and $b \in [3.75, 9]$
E. $(-\infty, \infty)$
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9. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No more than 5 units from the number 4.

- A. $[-1, 9]$
 - B. $(-1, 9)$
 - C. $(-\infty, -1) \cup (9, \infty)$
 - D. $(-\infty, -1] \cup [9, \infty)$
 - E. None of the above
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8x - 3 \leq 5x + 4$$

- A. $[a, \infty)$, where $a \in [0.06, 1.26]$
 - B. $[a, \infty)$, where $a \in [-1.23, -0.26]$
 - C. $(-\infty, a]$, where $a \in [-1.54, 0.46]$
 - D. $(-\infty, a]$, where $a \in [-0.46, 5.54]$
 - E. None of the above.
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